THE INITIAL SEATS OF NEOPLASMS AND THEIR RELATIVE FREQUENCY.

By W. ROGER WILLIAMS, F.R.C.S.,

OF LONDON,

SURGEON TO THE WESTERN GENERAL DISPENSARY; LATE REGISTRAR TO THE MIDDLESEX HOSPITAL.

THE subject of which I am about to treat, notwithstanding its fundamental importance, is one that has never before been thoroughly investigated.

Indeed the requisite data for such an undertaking are themselves of comparatively recent origin. I refer to the Registrar's Reports of the Middlesex, University College, St. Bartholomew's and St. Thomas' hospitals for the last sixteen to twenty years. These reports constitute the beginning of a statistical history of disease.

It is to be hoped that in future publications, authors will avail themselves of these rich stores of facts more than has hitherto been customary, instead of trusting to mere impressions which are often erroneous. Here, as in other branches of knowledge, advancing science demands greater accuracy.

In my work on the *Principles of Cancer and Tumor Formation* I have pointed out that, since the origin and development of neoplasms follows a course homologous with that of the tissues in which they originate, we may classify these growths, like the normal tissues in association with which they develop, according as they originate from cell derivatives of the one or the other of the germinal layers. That is to say, they are either of *archiblastic* (epithelial) or *parablastic* (connective tissue) origin.

Now, on making an analysis of 14,480 primary neoplasms of all kinds, consecutively under treatment, I find that 10,409 originated from the archiblast, and only 4,071 from the

parablast. Whence it follows that the liability of the two great tissue-systems to originate neoplasms is very different; for these growths arise much more frequently from archiblastic than they do from parablastic structures. This remarkable fact may be explained as a particular instance of what I maintain is a general law, viz.: that the neoplastic process, like agamic reproduction in general, is most prone to arise where lowly organized cells are most abundant. For, of all tissues of the body, the archiblastic ones have on the whole departed less from the primordial type than any others; this is especially seen in that they consist entirely of cells which still retain in a marked degree much of their primitive powers of growth and reproduction.

The subjoined table, based on 14,480 cases, more fully illustrates the matter. Thus of 100 neoplasms:

ARCHIBLASTIC (72 PER CENT).	
Epithelioma*	54.5
Adenoma	3.5
Papilloma	2.6
Cystoma	11.4
PARABLASTIC (28 PER CENT).	
Sarcoma	9.4
Fibroma	11.5
Lipoma	3.8
Osteoma	1.8
Chondroma	.5
Angioma	1.0

*The term "epithelioma" is here used in the sense of malignant epithelial neoplasm and therefore as synonymous with the terms cancer and carcinoma.

Passing next to the question of *malignancy*, what I find is that 64% of all neoplasms are malignant, and 36% non-malignant.

Of the *malignant* neoplasms 54.5% are of archiblastic (epithelial) origin, and 9.5% of parablastic (connective tissue) origin.

Of the *non-malignant* neoplasms 17.5% are derived from the archiblast (including cysts) and 18.5% from the parablast.

Or it may be stated in this way: 54.5% of all new growths are *cancers*; 9.4% *sarcomas*; 24.7% *non-malignant* neoplasms, and 11.4% *cysts*.

In further illustration of this subject I submit the following tables, based on the analysis of 15,481 primary neoplasms, consecutively under treatment at the four above-named metropolitan hospitals, during the last sixteen to twenty-one years. From these it will be seen that the liability of some parts of the body to originate neoplasms is very much greater than that of others. I propose to distinguish these localities as the *neoplastic areas.*

Perhaps the most general statement that can be made on the subject is that the neoplastic process is most prone to arise where organization is lowest, and that this tendency almost completely disappears where organization is highest.

The relative frequency of the *neoplastic process* in its chief seats I have found to be as follows:

	Per Cent.
Uterus	19.2
Breast	17.5
Skin	9.4
Connective tissue	7.7
Tongue and Mouth	6.3
Ovary	5.8
External genitals	5.1
Bones (except maxillæ)	4.0
Rectum	3.3
Maxillæ	2.9
Stomach	2.6
Lip	2.6
All others	13.6
	100.0

The most noteworthy feature in connection with this statement is the great frequency with which the *reproductive organs* (breast, uterus, testis, ovary and external genitals) originate neoplasms; 48.3% of all neoplasms arise in connection with these organs. The very great frequency with which the *uterus* and *breast* are attacked is particularly striking. It may be inferred from the fact that both of these organs are subject to remarkable morphological changes, long after completion of the fœtal development, that they are rich in lowly organized cells, which still retain much of their embryotic potentialities. It is probably this peculiarity which renders them so much more prone to originate neoplasms than other parts. On reference to Table II it will be seen that in the *uterus*

neoplasms arise with great frequency, both from the epithelial and the fibro myomatous elements; whereas, in the *breast* very few originate elsewhere than in the glandular epithelium. Phenomena of similar importance are noticeable with regard to neoplasms arising in the skin, tongue and mouth, ovary, external genitals, rectum, stomach, lips, œsophagus, and many other parts. On the other hand, in the *maxillæ, connective tissue, bones, eye, etc.*, most neoplasms arise from parablastic elements.

From these examples will be gathered that the relative liability of the same tissue elements to originate neoplasms varies in different localities.

Among the parts in which neoplasms very rarely originate must be mentioned *highly specialized structures* in general, such as the heart, pericardium, large blood vessels, voluntary muscles, spinal cord, nerves, ligaments, etc.

It will also be seen that *obsolete structures* have but little tendency to take on the neoplastic process, *e. g.*, the male breast, suprarenals, clitoris, prostate, thymus, intervertebral discs, membrana nictitans, vermiform appendix, coccyx, etc.

Other situations in which neoplasms rarely originate are the spleen, urethra, lachrymal gland, vertebræ, upper lip, small intestine, etc.

Previous authors, in estimating the relative frequency with which the various organs develop *epithelioma* (cancer), have based their statements on mortality records. My results have been obtained from the study of living patients. They are as follows:

	Per Cent.
Breast	25.6
Uterus	21.5
Tongue and mouth	11.0
Skin	7.6
External genitals	4.6
Rectum	5.4
Stomach	4.8
Lip	4.5
Liver	3.1
Œsophagus	2.4
Intestines (except rectum)	1.3
All others	8.2
	100.0

In the main these results accord with those arrived at by other British observers.

Nunn,[1] for instance, gives the relative liability as uterus, 38.9%; breast, 26%; stomach, 2.77%; and Sibley's[2] estimate nearly corresponds with this.

Continental authors are, however, practically unanimous in placing the *stomach* at the head of their lists; whilst a comparatively insignificant place is allotted to the breast, tongue and mouth and skin. Thus Salle,[3] basing his estimate on 1358 deaths from cancer in the Paris hospitals, gives the order of relative frequency as follows: Stomach, 32%; uterus, 28%; liver, breast, rectum, mouth, etc.

Marc D'Espine's[4] analysis of 889 deaths from cancer in the Canton of Geneva, during a period of twelve years gives the following result: Stomach, 45%; uterus, 15%; liver, 12%; breast, 8.5%; intestines, except rectum, 3.3%; rectum 3%; skin, 1.7%; tongue and mouth, 1%.

Virchow,[5] from examination of the mortality returns of Würzburg, during a period of three years, estimates the liability of the stomach at a still higher rate; thus: Stomach, 54.9%; uterus, 18.5%; rectum and intestines, 8.1%; liver, 7.5%; face and lips, 4.9%; breast, 4.3%.

Tanchou's list,[6] based on 9,118 cancer deaths from the Paris registers, is as follows: Uterus, 37%; stomach, 25%; breast, 13%; rectum, 2.5%; tongue and mouth, 0.5%.

The discrepancies between these continental estimates and those of British authors, appear so irreconcilable in several respects, that they probably indicate varying proneness of the organs to evolve cancer in different countries. The subject is one of great interest, and requires further investigation.

I will now offer a few remarks with regard to the greater liability of *certain parts of particular organs* to originate cancer.

[1]Cancer of the Breast. London. 1882, p. 20.

[2]Medico-Chirurgical Transactions, Vol. xlii, p. 114.

[3]Étiologie de la Carcinose. Paris. 1877.

[4]Essai analytique et critique du statistique mortuaire comparée, Géneve et Paris, 1858.

[5]Verhandlg. d. Würzb. Phys. med. Ges., x, 66.

[6]Vide Walshe, On the Nature and Treatment of Cancer.

First of all, with regard to the *female breast*, I have found that of 132 cases, in 42 the tumor was situated *centrally;* and in 90 *peripherally*. In 14.7% of all cases the disease was situated *quite outside the mammary gland*. Of these 90 cases, in 46 the tumor was situated at the upper part of the breast, in 21 at the lower part, in 20 at the axillary side, and in 3 at the sternal side. Of 151 cases, in 56% the disease was situated in the *left* breast, and in 44% in the *right*. The most striking feature, however, about mammary cancer in this connection, is the rarity with which it arises in the *nipple*. According to Gross[5] this happens only in 1.31% of all cases. Still more remarkable is the almost complete immunity of the *skin* of the nipple, areola and mammary region from cancerous disease. There is on record but a single well authenticated case[6] of cutaneous cancer of the female mamma. Those who believe in the traumatic causation of these growths will not find much support for their views in these considerations.

Of the cancers originating from the proper tissue of the mammary gland, the immense majority are of the *acinous* type, and evidently originate from the glandular acini. Cancers of the *tubular* type, which originate from the ducts, are certainly rare. I am at present unable to give exact numerical expression to this difference; but from the examination of a considerable number of specimens I should be inclined to estimate the proportional numbers at about 97 for the former, and 3% for the latter.

Another fact worth mentioning is the exceeding rarity with which the *melanotic* variety of cancer affects the female breast. Among the 2,397 cases of mammary neoplasms in Table IV, there was not a single example of it. As the mammary gland epithelium is a derivative of that of the skin this immunity is remarkable. In the *male* breast melanotic cancers are certainly not quite so rare; for of 100 cases of cancer of this part collected by me,[9] there were 3 instances of this kind, 2 acinous glandular cancer, and 1 squamous celled cutaneous epithelioma.

These facts with regard to the origin of breast cancers are

[5]International Journal of Medical Sciences, March, 1888, p. 224.

[6]Czerny's case, Centrbl. f. Chir., No. 24, 1886, p. 28, in the supplement.

[9]Vide Lancet, 1889, Vol. ii, p. 261, et. seq.

paralleled by those relating to *uterine* cancer; thus at least 95% of all uterine cancers originate from the glands of the *cervix;* whereas, only about 3% arise from the *corpus;* and 2% from the *portio vaginalis.*

In the *tongue and mouth* I have found the seats of the initial lesions (in 100 cases) to be as follows:

	Cases.
Edge of tongue (middle, 21; base, 14; tip, 5; front, 4; right side, 25; left side, 18)	48
Floor of mouth (near frænum)	21
Buccal surface of cheek	10
Gum	5
Dorsum of tongue	4
Empty socket of molar tooth	2
Soft palate	2
Hard palate	2
Floor of mouth (other than near frænum)	2
In substance of tongue	2
Elsewhere	2
	100

In the *skin* the same peculiarity is noticeable. Of 48 consecutive cases I found the disease began in the *nose* in 23 cases, *cheek* in 6, *thigh* in 4, *lower eye-lid* in 3, *foot* in 2, *forehead* in 2, and 1 each in neck, ear, back, abdomen, knee, axilla, hand and upper lip.

All parts of the body in which cancer originates manifest similar peculiarities.[10] It seems to me difficult to reconcile these facts with Cohnheim's hypothesis.

Passing on to the *sarcomata* I find that they arise from the bones, connective tissue and certain organs. An analysis of 1,066 cases gives the following percentage proportions: *Bones*, 36; *connective tissue*, 32; certain organs, 32.

The *bones* most liable (in 342 cases) were, in order of relative frequency: Superior maxilla, 102; femur, 61; inferior maxilla, 48; humerus, 22; tibia, 19; innominate, 19; skull, 19; scapula, 12; fibula, 11; foot, 6; rib, 6; sacrum, 4; ulna, 3; radius, 3; clavicle, 2; head, 2; coccyx, 2; sternum, 1. The immunity of the vertebræ is remarkable.

In the *connective tissue* the localities that most frequently originated sarcomata (in 200 cases) were: Face, 20; neck, 20; thigh, 18; leg, 13; orbit, 12; mediastinum, 11; peritoneum, 11;

[10]For further details of this kind vide Middlesex Hospital Surgical Report for 1888. London.

multiple, 10; nose, 10; groin, 8; retro-peritoneal, 8; arm, 7; shoulder, 7; scalp, 6; abdominal wall, 6; forearm, 5; hand, 4; popliteal space, 4; upper lip, 4; pelvis, 3; peri-renal, 2; muscle, 2; eyelid, 2; and 1 each as follows: foot, infra-clavicular, scapular, back, axilla, gluteal and ischio-rectal.

The *various organs* (in 324 cases) were affected as follows: Breast, 92; eye, 40; testis, 40; parotid, 32; ovary, 24; skin, 17; palate, 12; lymph gland, 12; kidney, 8; rectum, 7; bladder, 6; tonsil, 5; submaxillary, 4; lung, 3; prostate, 2; larynx, 2; pharynx, 2; vagina, 2; uterus, 2; and 1 each as follows: external ear, optic nerve, vulva, colon, thyroid, mouth, supra-renal, spinal meninges, tongue and brain.

The localities in which *myxomata* originated were noted in 29 cases: Thigh, 8, nearly all of the groin; parotid, 4; breast, 4; peri-renal, 2; and 1 each as follows: popliteal space, pectoral, loin, arm, testis, soft palate, naso-pharyngeal, pelvis, neck, finger and nose.

Fibromata.—Seventy-three per cent of all neoplasms of this kind arose from the uterus (of these 60% were myo-fibromas and 13% myxo-fibromatous polypi). Next in order came the maxillæ, 9.2%, including epulis, 8.8%; nasal fossæ, 5.3%; lower limb, 1.9%; external genitals, 1.3%; external auditory meatus, 1.2%; subcutaneous, 1.2%; painful tubercle, basis cranii, 1%; skin, 1%. The remaining 5% in order of relative frequency, were: Nerve, upper limb, trunk, head, larynx, bladder, neck, soft palate, tongue, rectum, trachea, ovary, tendon, multiple, heart and breast.

Lipomata.—Fatty tumors may be either *acquired* or of *congenital* origin, and it is important not to confuse the two varieties. The so-called *diffuse* lipomata, as I have shown[11] elsewhere, cannot be regarded as true neoplasms, and therefore will not be considered here. Similarly with many other so-called fatty tumors, such as *lipoma arborescens* of Müller, the numerous forms of *capsular lipoma*, the fatty deposits sometimes found in various neoplasms, myomas, cancers, sarcomas, etc.; all of these are but examples of abnormal fat deposition chiefly due to circulatory disturbances.

[11] Trans. Path. Soc. London. 1889.

Of 80 consecutive cases of true lipoma, 6 (or 7.5%) were *congenital*, and 74 (or 92.5%) *acquired*.

It is a peculiarity of *congenital* lipomas that they are usually deeply seated, adherent to adjacent parts such as bones, muscles, nerves, etc., which are sometimes malformed in consequence of their presence; and portions of these structures are not infrequently embedded in the tumor. The above mentioned six cases[12] were situated as follows: (1) At back of neck on right side beneath the muscles, which were deficient, and adherent to the periosteum of the occipital bone. (2) Gluteal region, right. (3) Clavicular region (right) adherent to clavicle and clavicular head of sterno-mastoid muscle, some muscular fibres passing right through the tumor. (4) Sacral region, firmly adherent to the periosteum of the sacrum. (5) Hand, right; a large encapsuled, lobulated tumor, situated beneath the muscles of the ball of the thumb, etc., some of which were deficient and adherent, the median nerve was embedded in the tumor, which was also adherent to several of the adjacent bones, though these were not obviously deformed. (6) Leg, right; two tumors adherent to the periosteum of the tibia.

Of 200 consecutive *acquired* lipomas, all but 5 were situated in the subcutaneous panniculus adiposus. These 5 cases were situated as follows: Beneath the pectoralis major muscle, 2 cases; beneath latissimus dorsi muscle 1 case; in the substance of the deltoid muscle 1 case; beneath the aponeurosis of the occipito-frontalis muscle 1 case. In 5 out of 190 cases there was more than a single tumor. In 5 out of 200 cases the tumor assumed a polypoid form; these tumors were situated thus: ischio-rectal region, 2; axilla, 1; gluteal region, 1; popliteal, 1.

Acquired lipomas originated in the following situations:

	Per Cent.	
Trunk.....	47.8	(Rather more than half situated posteriorly, chiefly in the lumbar and scapular regions).
Upper limb.....	27.8	(Chiefly in the deltoid, acromial and axillary regions).
Lower limb.....	12.2	(Thigh and gluteal regions chiefly).
Neck.....	8.4	(Most at back of neck).
Head.....	3.8	(Chiefly about the nose).
	100.0	

[12]Vide Middlesex Hospital Surgical Report for 1889.

Adenomata.—Of 505 consecutive cases, 73.6% originated in the breast; 12.6% in the parotid; 10.3% in the rectum (polypoid). Other localities were submaxillary gland, palate, sweat glands, lachrymal gland, septum nasi, uterus and face.

Papillomata.—Of 386 consecutive cases, meatus urinarius externus, 38.8%; skin, 26.7%, chiefly of the head; external genitals, not venereal, 15.5%; bladder, villous, 5.9%; tongue and mouth, 4.9%; lip, 2%; rectum, villous, 1.8%; other seats, anus, trachea and conjunctiva.

Osteomata.—Of 111 cases, terminal phalanx of great toe, subungual, 30.6%; femur, 16.2%; tibia, 11.7%; multiple, 9.9%; humerus, 9%; vertebræ, 4.5%; other seats in order of frequency were: superior maxilla, mastoid process, scapula, 5th metacarpal, innominate, ulna, external auditory process, metatarsal, terminal phalanx of middle toe, subungual (1 case only). The very frequent occurrence of the subungual exostosis, in every case but one situated on the terminal phalanx of the great toe, and nearly always on the inner side, is remarkable. These and other facts point to the probability of this lesion being but an abortive form of the lowest grade of digital duplicity.

Chondromata.—Of 72 cases, parotid, 37.5%; hand, 22.2%; long bones, 22.2%; superior maxilla, 2.8%; submaxillary, 4.8%; other situations, inferior maxilla, breast, testis, ischiorectal, lachrymal, toe, scapula, external ear and mediastinum.

Angiomata.—Of 94 cases, head, 55.3%; trunk, 21.3%; neck, 7.5%; external genitals, 5.3%; lower limb, 5.3%; upper limb, 5.3%.

Cystomata.—Of 1,640 cysts, *acquired*, 91.8%; *congenital*, 8.2%. Of *acquired* cysts the seats were:

	Per Cent.	
Ovary.....	48	(Of 216 ovarian cysts, 84.5 per cent originated in the ovary, and 11.5 in the broad ligament).
Sebaceous.....	29.2	(Two-thirds of the scalp.)
Spinal cord and round ligament	5.2	
Breast.....	4.1	
External genitals	4	
Dental (alveolar)	1.9	
Testis.....	1.5	
Floor of mouth (ranular).....	1.4	
Thyroid.....	1.0	

Other situations, peri-articular, neck, parotid, thigh, kidney, omentum, cerebellum, uterus, pelvis, groin, post-peritoneal, lip, loin, liver, humerus, finger.

Of *congenital* cysts, dermoid, 92.3%; serous, 7.7%. The seats of the dermoid cysts were, head, 41.6%, more than half of the orbital region; ovary, 35%; neck, 17.3%; other situations, thigh, scrotum, sternum, peritoneum.

I will now conclude with a few remarks as to the *influence of sex* on the liability to neoplasms. On reference to Table I, it will be seen that the liability of females to neoplasms is about twice that of males. Of 15,481 cases there tabulated, 5,191 are males and 10,290 females; or the percentage proportion is about 33 males to 67 females. This striking difference is entirely due to the great frequency with which, in females, the breast, uterus and to a less degree, the ovary, are attacked, the corresponding male organs seldom suffering. Omitting these, the male liability would preponderate in a very decided manner. In females 69% of *all neoplasms* attack the reproductiveorgans (uterus, breast, ovary and external genitals); in males, only about 11%.

Of 7,878 cases of epithelioma (cancer), 2,861 were males and 5,017 females, the proportion being 1 male to 1.7 females. According to the mortality returns of the Registrar General, which include all kinds of malignant disease, the proportion is 1 male to 2.28 females.[13] Of late this distinction has become less pronoûnced, owing to the increasing cancer mortality falling unduly on males; for instance the cancer mortality for 1886 is 5,754 males, and 10,489 females, or, 1 male to 1.8 females.

Rodent ulcers are pretty equally distributed between the sexes. Of 177 cases, males 98, females 78. In females, 78.2% of all *cancers* attack the reproductive organs, in males only 8.4%.

The relative liability of each sex to cancer in particular organs is very variable. For every case of cancer of the prostate, there occur 224 cases of uterine cancer, and for every

[13]Vide The Influence of Sex in Disease, by the author of this essay. London. Pages 8 and 15. The mortality returns referred to are for the 25 years from 1848 to 1872.

case of cancer of the male breast, 116 of the female breast. In all other situations, except the sexual glands (ovary and testis), liver, rectum and intestines, where both sexes are equally liable, the male proclivity to cancer greatly exceeds the female. In the lower lip it is 108 times as great, in the tongue and mouth 7 times, in the œsophagus 1.7 times, and in the external genitals 1.2 times.

Of 1,350 cases of *sarcoma*, there were 702 males to 648 females. In females, 23.4% of all sarcomas attack the reproductive organs; in males, 8.6%.

Myxomas like sarcomas are nearly equally distributed between the sexes.

The liability of females to *non-malignant* neoplasms as compared with males, is even greater than their liability to cancers. Of 4613 cases in Table I, there were 1,179 males to 3,434 females; or 1 male to 2.9 females. This excessive female liability is largely due to the same causes we have seen with regard to cancer, viz.: the frequency with which the breast (377 cases) and uterus (1,073 cases) are involved. Omitting these, however, the female proclivity to non-malignant neoplasms would still largely preponderate over that of males. Almost every kind of non-malignant neoplasm is, in fact, of much commoner occurrence in the female sex. To *fibromas* they are 9 times as prone as males, to *adenomas* 8 times, to *lipomas* more than twice, and to *papillomas* nearly twice.

The relative female liability to *cysts* is nearly as great as that to non malignant neoplasms; of 1,640 cysts, males 449, females 1,191; or 1 male to 2.6 females. This preponderance of females is entirely due to the frequency of *ovarian cysts* (752 cases). Omitting these, each sex would be about equally liable.

TABLE I.—SHOWING THE RELATIVE FREQUENCY OF THE DIFFERENT VARIETIES OF NEOPLASMS.

Kind of Neoplasm.	*Total Number of Cases.*	*Males.*	*Females.*	*Percentage.*		*Appendix.*
				Males.	*Females.*	
Epithelioma,[1] . . .	7878	2861	5017	36	64	
Sarcoma,[2]	1330	702	648	52	48	[1]Synonymous with cancer.
Fibroma, ...	1661	176	1485	10	90	[2]Including 50 cases of myxoma (M. 25, F. 25), and 24 of keloid (M. 11, F. 13).
Lipoma, ...	561	173	388	31	69	
Adenoma, ...	505	58	447	11	89	[3]Single cysts, 1505 (M. 392, F. 1113); congenital cysts, 135 (M. 57, F. 78).
Papilloma, ...	286	137	249	35	65	
Osteoma, ...	261	117	144	45	55	[4]Cerebral, 248 (M. 135, F. 113); cerebellar 39, (M. 22, F. 17); spinal cord 6, (M. 3, F. 3); mediastinal 109, (M. 73, F. 34); cutaneous mole 36, (M. 12, F. 24); teratoma 4, (M. 3, F. 1). (Probably but a small proportion of these so-called "cerebral tumors" were true neoplasms.
Chondroma, . . .	81	41	40	51	49	
Angioma.	157	65	92	41	59	
Cystoma,[3]	1640	449	1191	27	73	
Neoplasms unclassified,[4]	1001	412	599	41	59	
Total, . . .	15481	5191	10290	33	67	

TABLE II.—SHOWING THE INITIAL SEATS OF NEOPLASMS AND THEIR FREQUENCY IN BOTH SEXES.

Seat.	*Epithelioma.*	*Sarcoma.*	*Fibroma.*	*Lipoma.*	*Adenoma.*	*Papilloma.*	*Osteoma.*	*Chondroma.*	*Angioma.*	*Cystoma.*	*Unclassified.*	*Total.*
Uterus,	1571	2	1073[1]		1					2		2649
Breast,	1879	99[2]	1[3]	2	372	3		1	1	64		2422
Skin,	559	17	16		3[4]	98			140	440[5]	36[6]	1309
Connective tissue,		330[7]	98	558						85		1071
Tongue and mouth,	804	15[8]	3[9]		4[10]	19[11]			8	57[12]		880
Ovary,	27	24	1							752[13]		804
External genitals,	340	3	19			208[14]				141		712
Bones (except maxilla)	14	236[15]	15				256	35		1		557
Rectum,	401	7	1		52	6						467
Maxilla, superior.	70	102	136[16]				3	2		29		406
Maxilla, inferior.	13	38					2	1				
Stomach,	352								6	1		352
Lip,	332	4	1			8				1	287[17]	352
Brain,	1	1								1		290
Liver,	228											229
Œsophagus,	179									7		179
Parotid,	2	36[18]			64[19]			27			107	136
Mediastinum,	15	11						1				134
Intestine, (except rectum and anus,	98	1[20]						1		107		99
Testis,	27	41[21]										93
Bladder,	59	6	2			23						90
Nasal fossa,		1	78[22]		1							80
Lymphatic glands,	59	12										71
Peritoneum,	54	11										68
Larynx,	38	2	6			13						39
Eye,	1	40	2			1			1			45
Ear, (external)	13	1[23]	19[24]			2		1	1			37

TABLE II.—CONTINUED.

Seat.	*Epithelioma.*	*Sarcoma.*	*Fibroma.*	*Lipoma.*	*Adenoma.*	*Papilloma.*	*Osteoma.*	*Chondroma.*	*Angioma.*	*Cystoma.*	*Unclassified.*	*Total.*
Kidney,	24	8								2		34
Anus,	27					2[25]						29
Thyroid,	7	1								15		23
Pancreas,	21											21
Tonsil,	13	5										18
Lung,	14	3								2		17
Submaxillary gland,	4	4			5			2				17
Pharynx,	14	2										16
Pelvis,	10	4[26]								1		15
Gall-bladder,	11											11
Prostate,	7	2										9
Spinal cord,		1									6	7
Urethra,	1						2					3
Pleura,	3											3
Trachea,			1				1					2
Pericardium,	2											2
Lachrymal gland,					1			1				2
Spleen,	1											1
Suprarenal body,		1										1
Coccygeal gland,	1											1
Abdominal wall (not skin),	1											1
Heart,			1									1
Total,	7297	1081	1473	560	503	386	261	72	157	1598	436	13824
Unclassified,	581	269	188	1	2			9		42	565	1647
Grand total,	7878	1350	1661	561	505	386	261	81	157	1040	1001	15481

TABLE III.—SHOWING THE INITIAL SEATS OF NAOPLASMS AND THEIR RELATIVE FREQUENCY IN MALES.

Seats.	Epithelioma.	Sarcoma.	Fibroma.	Lipoma.	Adenoma.	Papilloma.	Osteoma.	Chondroma.	Angioma.	Cystoma.	Unclassified.	Total.
Skin,	370	7	6		1[1]	56			57	247[2]	12[3]	756
Tongue and mouth,	703	6[4]			1[5]	11[6]			3[7]	7[8]		731
Connective tissue,		183[9]	28	172						50		433
Lips,	327[10]	2[11]				4			4[12]			337
External genitals,	182[13]		2			31[14]				67[15]		282
Bones (except maxilla)	7	134[16]	8[17]				114	17		1		281
Rectum,	199	5	1		16							231
Stomach,	222											222
Maxilla, superior.	42	53	20[18]				2	1				180
Maxilla, inferior.	12	31					1	1		17		
Brain,		1								2	19 157	159
Œsophagus,	144											144
Liver,	115											175
Testis,	27	41[20]						1		24		93
Mediastinum,	11	7									73	91
Bladder,	43	5	1			21						76
Parotid,	2	18[21]			26			14		3		63
Intestine (except rectum and anus,	49	1[22]										50
Larynx,	34	2	4			9						49
Lymphatic glands,	33	10										43
Nasal fossa,		1	31[23]		1							33
Peritoneum,	20	8								1		29
Breast,	16	5[24]		1	1				1	1		25
Kidney,	17	3								1		21
Eye,		20										21
Ear (external),	11	1[25]	6[26]			2						20
Anus,	17					1						18

TABLE III.—CONTINUED.

Seats.	*Epithelioma.*	*Sarcoma.*	*Fibroma.*	*Lipoma.*	*Adenoma.*	*Papilloma.*	*Osteoma.*	*Chondroma.*	*Angioma.*	*Cystoma.*	*Unclassified.*	*Total.*
Pancreas, ...	14											14
Tonsil, ...	9	5										14
Lung, ...	10	3										13
Thyroid, ...	4									9		13
Submaxillary gland,	4	4			1			1		2		12
Prostate, ...	7	2										9
Pharynx, ...	7											7
Gall-bladder, . . .	5											5
Urethra, ...	1					2						3
Spinal cord, . . .											3	3
Pelvis, ...	1											1
Pericardium, . . .	1											1
Spleen, ...	2											1
Lachrymal gland, .								1				1
Suprarenal capsule, .		1										1
Coccygeal gland, . .	1											1
Abdominal wall (not skin), ...	1											1
Heart, ...			1									1
Total, . . .	2669	559	109	172	57	137	117	36	65	31	245	4597
Unclassified, . . .	192	143	67	1	1			5		18	167	594
Grand total, .	2861	702	176	173	58	137	117	41	65	449	412	5191

TABLE IV.—SHOWING THE INITIAL SEATS OF NEOPLASMS AND THEIR RELATIVE FREQUENCY IN FEMALES.

Seats.	*Epithelioma.*	*Sarcoma.*	*Fibroma.*	*Lipoma.*	*Adenoma.*	*Papilloma.*	*Osteoma.*	*Chondroma.*	*Angioma.*	*Cystoma.*	*Unclassified.*	*Total.*
Uterus,	157[1]	2	1073[1]		1					2		2649
Breast,	1863	94[2]	1[3]	1	371	3		1		63		2397
Ovary,	27	24	1							752[4]		9 4
Connectiue tissue,		147[6]	70	386						35		638
Skin,	189	10	10		2[6]	42			83	193[7]	24[8]	553
External genitals,	158[9]	3[10]	17[11]	1		167[12]				74[13]		430
Bones (except maxilla)	7	102	7[14]				142	18				276
Rectum,	202	2			26[15]	6						236
Maxilla, superior.	28	49	116[16]				1	1		12		226
Maxilla, inferior.	1	17					1					
Tongue and mouth,	101	9[17]	3[18]		3[19]	8[20]			5	20[21]		149
Brain,	1[22]										130[23]	131
Stomach,	130											130
Liver,	113									1		114
Parotid,		18[24]			38[25]			13		4		73
Intestine (except rectem and anus,	49											49
Nasal fossæ,			47[26]									47
Mediastinum,	4	4						1			34	43
Peritoneum,	34	3								2		39
Œsophagus,	35											35
Lymphatic glands,	26	2										28
Eye,	1	20	1			1			1			24
Bladder,	16	1	1			2						20
Ear (external),	2		13[27]					1	1			17
Lips,	5[28]	2[29]	1[30]			4[31]			2[32]			15

TABLE IV.—CONTINUED.

Seats.	*Epithelioma.*	*Sarcoma.*	*Fibroma.*	*Lipoma.*	*Adenoma.*	*Papilloma.*	*Osteoma.*	*Chondroma.*	*Angioma.*	*Cystoma.*	*Unclassified.*	*Total.*
Pelvis,	9	4[33]								1		14
Kidney,	7	5								1		13
Anus,	10					1[31]						11
Larynx.	4		2			4						10
Thyroid,	3	1								6		10
Pharynx,	7	2										9
Pancreas,	7											7
Gall-bladder,	6											6
Submaxillary gland,					4			1				5
Spinal cord,		1									3	4
Lung,	4											4
Tonsil,	4											4
Pleura,	3											3
Trachea,			1			1						2
Lachrymal gland,					1							1
Pericardium,	1											1
Total,	4628	522	1364	388	446	249	144	36	92	1167	191	9227
Unclassified,	389	126	121		1			4		24	398	1063
Grand total,	5017	648	1485	388	447	247	144	40	92	1191	589	10290

NOTES TO TABLE II.

1. Myofibroma, 883; myxofibroma (polypoid), 190.
2. Myxoma, 4.
3. The fibro-adenomas are classed with the adenomas.
4. Of sweat-glands.
5. Sebaceous.
6. Moles.
7. Myxoma, 22.
8. Palate, 12; tongue, 1; mouth, 1: myxoma, 1.
9. Palate, 2; tongue, 1.
10. Palate.
11. Tongue, 8; palate, 8; mouth, 5; gums, 1.
12. Ranula, 22; dermoid, 5.
13. Ovarian, 635; broad ligament, 87; dermoid, 30.
14. Non-venereal.
15. Myxoma, 1.
16. Epulis, 130.
17. Cerebral, 248; cerebellar, 30. (Probably only a small proportion of truly neoplastic origin).
18. Myxoma, 4.
19. The fibro-adenomas are classed with the adenomas.
20. Colon.
21. Myxoma, 1.
22. Polypoid myxofibromas.
23. Melanotic.
24. Aural polypi, 14.
25. Non-venereal.
26. Myxoma, 1.

NOTES TO TABLE III.

1. Of cutaneous sweat gland.
2. Sebaceous.
3. Moles.
4. Tongue, 1; mouth, 1; palate, 4.
5. Palate.
6. Tongue, 5; soft palate, 3; roof of mouth, 2; gum, 1.
7. Tongue, 1; mouth, 2.
8. Ranula, 6; dermoid, 1.
9. Myxoma, 14.
10. Upper lip, 1.
11. Both of upper lip.
12. Lower, 3; upper, 1.
13. Penis, 106; scrotum, 76.
14. Non-venereal.
15. Spermatic cord, 66; dermoid of scrotum, 1.
16. Myxoma, 1.
17. Basis cranii, nasopharyngeal polypi.
18. Epulis.
19. Cerebral, 135; cerebellar, 22.
20. Myxoma, 1.
21. Myxoma, 3.
22. Colon.
23. Polypoid myxofibromas.
24. Myxoma, 2.
25. Melanotic.
26. Aural polypus.

NOTES TO TABLE IV.

1. Myofibroma, 383; myxofibroma (polypoid), 190.
2. Myxoma, 2.
3. The fibro-adenomas are classed with the adenomas.
4. Ovarian, 635; broad ligament, 87; dermoid, 30.
5. Myxoma, 8.
6. Cutaneous sweat glands.
7. Sebaceous.
8. Moles.
9. Vulva, 104; nympha, 6; clitoris, 7; symphisis pubis, 1; vagina 40.
10. Vagina, 2; vulva, 1.
11. Labia maj., 12; lab. min., 2; vagina, 3.
12. Urethral caruncle, 148; the others non-venereal.
13. EXT. genitals, 61; round ligament, 13.
14. Basis cranii.
15. Polypoid.
16. Epulis, 110.
17. Palate, 8; myxoma, 1.
18. Palate, 2; tongue, 1.
19. Palate.
20. Tongue, 3; soft palate, 1; vulva, 1; mouth, 3.
21. Ranula, 16; dermoid, 4.
22. Cerebral, 113; cerebellar, 17.
23. Dura mater.
24. Myxoma, 1.
25. The fibro-adenomas are classed with the adenomas.
26. Polypoid myxofibroma.
27. Aural polypus.
28. Lower lip, 3; upper lip, 2.
29. Upper lip, 2.
30. Lower lip.
31. Upper lip, 1.
32. Upper lip, 2.
33. Myxoma, 1.
34 Non-venereal.